

<110> Mize, Nancy K.  
Haley-Vicente, Dana A.

<130> 28110/36858A

<150> US 60/245,346  
<151> 2000-11-02

&lt;170&gt; PatentIn Ver. 2.0

<211> 998

<213> Homo sapiens

<221> CDS

<222> (54) .. (512)

<400> 1

ggttccagga actcaggatc tgcagtgagg accagacacc actgattgca gga atg 56

Met

tgt tcc ctc ccc atg gca aga tac tac ata att aaa tat gca gac cag 104

Cys Ser Leu Pro Met Ala Arg Tyr Tyr Ile Ile Lys Tyr Ala Asp Gln

5

10

15

aag gct cta tac aca aga gat ggc cag ctg ctg gtg gga gat cct gtt 152

Lys Ala Leu Tyr Thr Arg Asp Gly Gln Leu Leu Val Gly Asp Pro Val

20

25

30

45

65

80

95

110

125

145

150

cccccaaacc aagctcatcc tgctcagggt ctatggtagg cagaataatg tccccgaaa 602

tatgtccaca tctaataccc aagatctgtg catatgttac catacatgtc caaagagggt 662

ttgcaaagt gattatgtta aggatcttga aatgaggaga caatcctggg ttatccttgt 722

gggctcagtt taatcacaag aaggaggcag gaaggagag tcagagagag aatggaagat 782

accatgcttc taattttgaa gatggagtga ggggccttga gccaacatat gcagggtgtt 842

ttagaaggag gaaaagccaa gggaacggat tctcctctat agtctccgga aggaacacag 902

ctcttgacac atggatttca gctcagtgac acccatttca gacttctgac ctccacaact 962

ataaaataat aaacttgtgt tattgtaaac ctctgg 998

<210> 2

<211> 152

<212> PRT

<213> Homo sapiens

<400> 2

Met Cys Ser Leu Pro Met Ala Arg Tyr Tyr Ile Ile Lys Tyr Ala Asp

1 5 10 15

Gln Lys Ala Leu Tyr Thr Arg Asp Gly Gln Leu Leu Val Gly Asp Pro

20 25 30

Val Ala Asp Asn Cys Cys Ala Glu Lys Ile Cys Thr Leu Pro Asn Arg

35 40 45

10003671.110201

50                      55                      60

65                      70                      75                      80

85                      90                      95

100                      105                      110

115                      120                      125

130                      135                      140

145 150

<210> 3

<211> 998

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (3) .. (512)

<400> 3

gg ttc cag gaa ctc agg atc tgc agt gag gac cag aca cca ctg att 47

Phe Gln Glu Leu Arg Ile Cys Ser Glu Asp Gln Thr Pro Leu Ile

1

5

10

15

gca gga atg tgt tcc ctc ccc atg gca aga tac tac ata att aaa tat 95

Ala Gly Met Cys Ser Leu Pro Met Ala Arg Tyr Tyr Ile Ile Lys Tyr

20

25

30

gca gac cag aag gct cta tac aca aga gat ggc cag ctg ctg gtg gga 143

Ala Asp Gln Lys Ala Leu Tyr Thr Arg Asp Gly Gln Leu Leu Val Gly

35

40

45

gat cct gtt gca gac aac tgc tgt gca gag aag atc tgc aca ctt cct 191

Asp Pro Val Ala Asp Asn Cys Cys Ala Glu Lys Ile Cys Thr Leu Pro

50

55

60

10003671.10201

aac aga ggc ttg gac cgc acc aag gtc ccc att ttc ctg ggg atc cag 239  
Asn Arg Gly Leu Asp Arg Thr Lys Val Pro Ile Phe Leu Gly Ile Gln

65

70

75

gga ggg agc cgc tgc ctg gca tgt gtg gag aca gaa gag ggg cct tcc 287  
Gly Gly Ser Arg Cys Leu Ala Cys Val Glu Thr Glu Glu Gly Pro Ser

80

85

90

95

cta cag ctg gag gat gtg aac att gag gaa ctg tac aaa ggt ggt gaa 335  
Leu Gln Leu Glu Asp Val Asn Ile Glu Glu Leu Tyr Lys Gly Gly Glu

100

105

110

gag gcc aca cgc ttc acc ttc ttc cag agc agc tca ggc tcc gcc ttc 383  
Glu Ala Thr Arg Phe Thr Phe Phe Gln Ser Ser Ser Gly Ser Ala Phe

115

120

125

agg ctt gag gct gct gcc tgg cct ggc tgg ttc ctg tgt ggc ccg gca 431  
Arg Leu Glu Ala Ala Ala Trp Pro Gly Trp Phe Leu Cys Gly Pro Ala

130

135

140

gag ccc cag cag cca gta cag ctc acc aag gag agt gag ccc tca gcc 479  
Glu Pro Gln Gln Pro Val Gln Leu Thr Lys Glu Ser Glu Pro Ser Ala

145

150

155

cgt acc aag ttt tac ttt gaa cag agc tgg tag ggagacagga aactgcgttt 532  
Arg Thr Lys Phe Tyr Phe Glu Gln Ser Trp

160

165

170

tagccttggtg cccccaacc aagctcatcc tgctcagggt ctatggtagg cagaataatg 592

tccccgaaa tatgtccaca tccaatccc aagatctgtg catatgttac catacatgtc 652

10003571 10001

ctccacaact ataaaataat aaacttgtgt tattgtaaac ctctgg 998

<213> Homo sapiens

<400> 4

1                      5                      10                      15

20                      25                      30

35                      40                      45

50                      55                      60

Met Val Leu Ser Gly Ala Leu Cys Phe Arg Met Lys Asp Ser Ala Leu

1 5 10 15



Lys Val Leu Tyr Leu His Asn Asn Gln Leu Leu Ala Gly Gly Leu His

20

25

30

Ala Gly Lys Val Ile Lys Gly Glu Glu Ile Ser Val Val Pro Asn Arg

35

40

45

Trp Leu Asp Ala Ser Leu Ser Pro Val Ile Leu Gly Val Gln Gly Gly

50

55

60

Ser Gln Cys Leu Ser Cys Gly Val Gly Gln Glu Pro Thr Leu Thr Leu

65

70

75

80

Glu Pro Val Asn Ile Met Glu Leu Tyr Leu Gly Ala Lys Glu Ser Lys

85

90

95

Ser Phe Thr Phe Tyr Arg Arg Asp Met Gly Leu Thr Ser Ser Phe Glu

100

105

110

Ser Ala Ala Tyr Pro Gly Trp Phe Leu Cys Thr Val Pro Glu Ala Asp

115

120

125

Gln Pro Val Arg Leu Thr Gln Leu Pro Glu Asn Gly Gly Trp Asn Ala

130

135

140

Pro Ile Thr Asp Phe Tyr Phe Gln Gln Cys Asp

145

150

155

<210> 6

<211> 178

<212> PRT

10003671 110201

<213> Rattus rattus

<400> 6

Met Glu Ile Cys Arg Gly Pro Tyr Ser His Leu Ile Ser Leu Leu Leu

1 5 10 15

Ile Leu Leu Phe Arg Ser Glu Ser Ala Gly His Pro Ala Gly Lys Arg

20 25 30

Pro Cys Lys Met Gln Ala Phe Arg Ile Trp Asp Thr Asn Gln Lys Thr

35 40 45

Phe Tyr Leu Arg Asn Asn Gln Leu Ile Ala Gly Tyr Leu Gln Gly Pro

50 55 60

Asn Thr Lys Leu Glu Glu Lys Ile Asp Met Val Pro Ile Asp Phe Arg

65 70 75 80

Asn Val Phe Leu Gly Ile His Gly Gly Lys Leu Cys Leu Ser Cys Val

85 90 95

Lys Ser Gly Asp Asp Thr Lys Leu Gln Leu Glu Glu Val Asn Ile Thr

100 105 110

Asp Leu Asn Lys Asn Lys Glu Glu Asp Lys Arg Phe Thr Phe Ile Arg

115 120 125

Ser Glu Thr Gly Pro Thr Thr Ser Phe Glu Ser Leu Ala Cys Pro Gly

130 135 140

Trp Phe Leu Cys Thr Thr Leu Glu Ala Asp His Pro Val Ser Leu Thr

145 150 155 160

10005411001

Asn Thr Pro Lys Glu Pro Cys Thr Val Thr Lys Phe Tyr Phe Gln Glu  
165 170 175

Asp Gln

<210> 7

<211> 177

<212> PRT

<213> Sus scrofa

<400> 7

Met Glu Val Ser Arg Tyr Leu Cys Ser Tyr Leu Ile Ser Phe Leu Leu  
1 5 10 15

Phe Leu Phe His Ser Glu Thr Ala Cys His Pro Leu Gly Lys Arg Pro  
20 25 30

Cys Arg Met Gln Ala Phe Arg Ile Trp Asp Val Asn Gln Lys Thr Phe  
35 40 45

Tyr Leu Arg Asn Asn Gln Leu Val Ala Gly Tyr Leu Gln Gly Pro Asn  
50 55 60

Thr Lys Leu Glu Glu Lys Ile Asp Val Val Pro Val Glu Pro His Phe  
65 70 75 80

Val Phe Leu Gly Ile His Gly Gly Lys Leu Cys Leu Ser Cys Val Lys  
85 90 95

1000367110201

110

125

140

160

175

30



<211> 159

<212> PRT

<213> Homo sapiens

<400> 9

Met Ala Leu Glu Thr Ile Cys Arg Pro Ser Gly Arg Lys Ser Ser Lys

1 5 10 15

Met Gln Ala Phe Arg Ile Trp Asp Val Asn Gln Lys Thr Phe Tyr Leu

20 25 30

Arg Asn Asn Gln Leu Val Ala Gly Tyr Leu Gln Gly Pro Asn Val Asn

35 40 45

Leu Glu Glu Lys Ile Asp Val Val Pro Ile Glu Pro His Ala Leu Phe

50 55 60

Leu Gly Ile His Gly Gly Lys Met Cys Leu Ser Cys Val Lys Ser Gly

65 70 75 80

Asp Glu Thr Arg Leu Gln Leu Glu Ala Val Asn Ile Thr Asp Leu Ser

85 90 95

Glu Asn Arg Lys Gln Asp Lys Arg Phe Ala Phe Ile Arg Ser Asp Ser

100 105 110

Gly Pro Thr Thr Ser Phe Glu Ser Ala Ala Cys Pro Gly Trp Phe Leu

115 120 125

Cys Thr Ala Met Glu Ala Asp Gln Pro Val Ser Leu Thr Asn Met Pro

130 135 140

FOOT 14000



<400> 12

ggcagtgga ctgggtttga gctgggctta tctccaact gtgaggagg ctacagcaca 60  
ctccacccca ctctcagggc tgggaattgt tgtggctcag ctatttgggg gaatctgttt 120  
tccagtttct cagaaccagc gcaagcacac acatcccagg ctacaccccc tgggtggtgg 180  
acttgctccc ggatagcctc agtcagggag aggcagagct gcctggagcc tgcagggttg 240  
gtggaagcct tgggtgattc tggcaggcca attatagatg aatggcctgg ggaaccctgt 300  
cagcccgtgg ctgagtggtt ctaagcccca gcacgtctgc ctctggcttc acccagcctc 360  
cttttctaac tgcccttctc tctcccccac cagtgaggac cagacaccac tgattgcagg 420  
aatgtgttcc ctcccatgg caagatacta cataattaa tatgcagacc agaaggtctc 480  
atacacaaga gacggccagc tgctgggtgg agatcctgtt gcagacaact gctgtgcaga 540  
gaagatctgc acacttcta acagaggctt ggaccgcacc aagggtccca ttttcctggg 600  
gatccaggga gggagccgct gcctggcatg tgtggagaca gaagaggggc ctccctaca 660  
gctggaggat gtgaacattg aggaactgta caaaggtggt gaagaggcca cacgttcac 720  
cttcttcag agcagctcag gctccgcctt caggcttgag gctgctgcct ggctggctg 780  
gttcctgtgt ggcccgagc agcccagca gccagtacag ctaccaagg agagtggagc 840  
ctcagcccgt accaagtttt actttgaaca gagctggtag ggagacagga aactgcgttt 900  
tagccttggtg ccccaaaacc aagctcatcc tgctcagggc ctatggtagg cagaataatg 960  
tccccgaaa tatgtccaca tctaatccc aagatctgtg catatgttac catacatgtc 1020  
caaagagggt ttgcaaagt gattatgta aggatcttga aatgaggaga caatcctggg 1080  
ttatccttgt gggctcagtt taatcacaag aaggaggcag gaaggagag tcagagagag 1140  
aatggaagat accatgcttc taattttgaa gatggagtga ggggccttga gccaacatat 1200  
gcttggtgtt ttagaaggag gaaaagccaa gggaacggat tctcctctat agtctccgga 1260  
aggaacacag ctcttgacac atggatttca gctcagtgac acccatttca gacttctgac 1320  
ctccacaact ataaaataat aaacttgtgt tattgtaaac ctctgg 1366

<210> 13

<211> 200

<212> PRT

<213> Homo sapiens

<400> 13

1000367.110201



Met Asn Gly Leu Gly Asn Pro Cys Ser Pro Trp Leu Ser Gly Ser Lys  
1 5 10 15

Pro Gln His Val Cys Leu Trp Leu His Pro Ala Ser Phe Ser Asn Cys  
20 25 30

Pro Ser Leu Leu Pro Ile Ser Glu Asp Gln Thr Pro Leu Ile Ala Gly  
35 40 45

Met Cys Ser Leu Pro Met Ala Arg Tyr Tyr Ile Ile Lys Tyr Ala Asp  
50 55 60

Gln Lys Ala Leu Tyr Thr Arg Asp Gly Gln Leu Leu Val Gly Asp Pro  
65 70 75 80

Val Ala Asp Asn Cys Cys Ala Glu Lys Ile Cys Thr Leu Pro Asn Arg  
85 90 95

Gly Leu Asp Arg Thr Lys Val Pro Ile Phe Leu Gly Ile Gln Gly Gly  
100 105 110

Ser Arg Cys Leu Ala Cys Val Glu Thr Glu Glu Gly Pro Ser Leu Gln  
115 120 125

Leu Glu Asp Val Asn Ile Glu Glu Leu Tyr Lys Gly Gly Glu Glu Ala  
130 135 140

Thr Arg Phe Thr Phe Phe Gln Ser Ser Ser Gly Ser Ala Phe Arg Leu  
145 150 155 160

Glu Ala Ala Ala Trp Pro Gly Trp Phe Leu Cys Gly Pro Ala Glu Pro  
165 170 175

1000367 140004

180

190

195

200

<210> 14

<211> 1366

<212> DNA

<213> Homo sapiens

<400> 14

ggcagtgggga	ctgggttttga	gctggggctta	tcttccaact	gtgaggggagg	ctacagcaca	60
ctccaccccca	ctctcagggc	tgggaattgt	tgtgggtcag	ctatttgggg	gaatctgttt	120
tccagtttct	cagaaccagc	gcaagcacac	acatcccagg	ctcacacccc	tggtggtctg	180
acttgctccc	ggatagcctc	agtcagggag	aggcagagct	gcctggagcc	tgtctgggctg	240
gtggaagcct	tgggtggattc	tggcaggcca	attatagacg	aatggcctgg	ggaacccgtg	300
cagcccggtg	ctgagtgggt	ctaagcccca	gcacgtctgc	ctctggcttc	accagcctc	360
cttttctaac	tgcccttctc	tcttccccat	cagtgaggac	cagacaccac	tgattgcagg	420
aatgtgttcc	ctccccatgg	caagatacta	cataattaaa	tatgcagacc	agaaggctct	480
atacacaaga	gacggccagc	tgctgggtgg	agatcctggt	gcagacaact	gctgtgcaga	540
gaagatctgc	acacttecta	acagaggctt	ggaccgcacc	aaggteccca	ttttcctggg	600
gatccagggg	gggagccgct	gcctggcatg	tgtggagaca	gaagaggggc	cttccttaca	660
gctggaggat	gtgaacattg	aggaactgta	caaaggtggt	gaagaggcca	cacgttcac	720
cttcttccag	agcagctcag	gctccgcctt	caggcttgag	gctgctgcct	ggcctggetg	780
gttctctgtg	ggccccgcag	agccccagca	gccagtacag	ctcaccaagg	agagtgagcc	840
ctcagcccgt	accaagtttt	actttgaaca	gagctggtag	ggagacagga	aactgcgttt	900
tagccttgtg	cccccaaacc	aagctcatcc	tgctcaggg	ctatggtagg	cagaataatg	960
tccccgaaa	tatgtccaca	tctaataccc	aagatctgtg	catatgttac	catacatgtc	1020
caaagagggt	ttgcaaagt	gattatgtta	aggatcttga	aatgaggaga	caatcctggg	1080
ttatccttgt	gggtctcagtt	taatcacaag	aaggaggcag	gaagggagag	tcagagagag	1140

aatggaagat accatgcttc taattttgaa gatggagtga ggggccttga gccaacatat 1200  
gcttggtgtt ttagaaggag gaaaagccaa gggaacggat tctcctctat agtctccgga 1260  
aggaacacag ctcttgacac atggatttca gctcagtgac acccatttca gacttctgac 1320  
ctccacaact ataaaataat aaacttgtgt tattgtaaac ctctgg 1366

<210> 15

<211> 5445

<212> DNA

<213> Homo sapiens

<400> 15

ctggactgga ccagcattga atttcttcca gctctttgag ctgacactga cccagagtgg 60  
gagtcacag cttgctatcc accttcaccc agggccctcc actttgttgc cccacctaga 120  
tctgggcaca gctaccacac tgcccactgt cctgctgcta caaccaaaga agccccagtg 180  
gtttggccaa ggggagccca tcatcaagtg ggcttgcatg gaggccatga tgctgttgag 240  
ttatctgtac tgggggattg tctagtcctt taggactcaa agtgctggcc aggaggaacc 300  
agcagcattg acatcacctg gttgcatatt tgaaatgtac agtctcaggc cccaccccag 360  
gcctgaaaaa ccagaatctg ttattttaac aagaactgca ggtgggttat atatttatta 420  
ataagtgtga agaattggaat gaaagtacat cagttcccaa gcagcatggc tgattgctgg 480  
aatcactcca agtctactg aattagaacc ttcggcccag gaaatagtaa ttatacagag 540  
tccccaggt gatgcagatg ggagggcaca ttagggagcc aatgacttta actgaacact 600  
tcatttaaaa aatgttgaaa ctacttgat actacaaagg aaattcatgt tcattatagg 660  
aaaatgttga tatgtttaa aaattactca taaagccata ggtaagtggg gcaacaacac 720  
gagtaacata tctatgtatg tgtctctatg tgtggattta aatagaatta cagtgtacac 780  
ttgatttata atctgcattt ttcacctaat atattttgaa aatttttatg tcctaaaaca 840  
agcttctata atatcatctt taacaaacac atacatcctt atttattgaa ttttgctata 900  
atttcttagc caattaccta ttactgaaaa ttcagatttt tttcaacttc ttgctattgt 960  
aaaaaattat gcagtgaaca tttttgtaag taaacatttg ggcaatccgt tatttttctt 1020  
aagagtaagg gaaacacatg caatcacaaa gtatacagaa tgctttaaga ctttcattca 1080

1000367.10201

cagcaccaac	atccctccag	aatttgcact	tgttagtccc	tattatcctt	cactcctaagt	1140
ctcaaagtca	tacccaaggg	cctggggaca	gaaaatgact	tgtccaaagt	gacagtgaca	1200
gacccagtac	taaaagccac	cttggctaca	gccctgtttc	tggaaactga	gtgctgaggt	1260
ggttggaagc	cgtatcctca	gcaccacct	gttcctttct	acctgcctcc	ccagggtccc	1320
tcagcatctc	tctattcctc	cctgagccct	attactttct	tccacctgcc	ttcttccttt	1380
ctcttctctc	attttctgct	ttcttatatt	ttttcttctc	tattcccttc	ttatttggtg	1440
agaatcagat	ctactcggta	aacctcagcc	ctagtcatac	ttgcgttact	ttcctgagct	1500
aatttccaac	tcttgattag	ctctgggttt	atttccatgc	taaattctgg	actggccttt	1560
ccaatgggtg	ttcattttag	ggaagagctc	taggacagga	taaccctatc	ggaaggagca	1620
gagtcattgt	aggtctgtgt	gcctggcatt	tatacagggc	cactatcttc	actgtgccat	1680
tttccatctg	gaacagaaat	ggggagtttg	gatgggctgt	tttcagcagt	cttggccaag	1740
cacttctagt	cactaggaat	gatgttttcc	aactctctgg	ggagacccca	ccagcctcac	1800
tgctgctgga	gaccccttct	agttgtgctc	tcttctttca	ctctgggctc	tagttatcta	1860
acccttggct	agttatgggg	gcgggggtgt	ggtgccctgt	tggccaacag	ggcagtgggg	1920
ctggggttga	gctgggctta	tcctccaact	gtgagggagg	ctacagcaca	ctccacccca	1980
ctctcagggc	tgggaattgt	tgtggctcag	ctatttgggg	gaatctgttt	tccagtttct	2040
cagaaccagc	gcaagcacac	acatcccagg	ctcacacccc	tggtggtggg	acttgcctcc	2100
ggatagcctc	agtcagggag	aggcagagct	gcctggagcc	tgctgggctg	gtggaagcct	2160
tggtggaatt	tggcaggcca	attatagatg	aatggcctgg	ggaaccctgt	cagcccgtag	2220
ctgagtggtt	ctaagcccca	gcacgtctgc	ctctggcttc	accagcctc	cttttctaac	2280
tgcccttctc	tcctcccat	cagtgaggac	cagacaccac	tgattgcagg	aatgtgttcc	2340
ctcccatggg	caagatacta	catgtaagtt	gtcctggcat	gtccctgctt	tccaagccag	2400
ggggtcaggg	tgggaagagg	aaaggaatgc	tgagtcagag	gatgaggctc	cttctcacct	2460
tagaaattgc	aagtgcccc	taattaagct	tcatcatcac	cacagtagca	acagctcttt	2520
cctgaacgtc	tgcaagatgc	cagccaatct	actgcctcat	ctctgttcca	aaaagtctat	2580
aagtggagtg	ttattaaccc	cattttacag	atctggaagc	tgaggctcaa	agagggtaaa	2640
taacttcccc	catgtcacac	agctaccaa	aggcagagcc	aggaatcaga	cttcatgtcc	2700
tctatgtctc	tccatccgcc	tctctgaaat	gtcagaaagt	tttgaatctc	aatgacagca	2760
tcttgatggt	gtccctgtgt	gcctttactc	ccagtgtggg	cttctaacac	ttacttacat	2820
ttcatctcat	ttgagatttg	cactcttctc	tatcttttac	tactttgttg	tctgtgattt	2880
tgtcataagc	tcctttcagg	aaggaggtga	ggcataagaa	aaatcaaaga	ggactctggg	2940
atgcatttcc	tctgccccct	ccatggaccc	tqtaatgtcc	agggctgtgt	cctggacaag	3000

gtgggtgggg agcagtcctg gtctcaagga ggtgacagcc tggctgggaa gcaagacaca 3060  
tacataggaa gcacataaat gacaaagcag atgtcagcac ttcagggcat ctaatctggg 3120  
ttctggtctc caaatagaat gctgctggca tgtgagttgt cacatctggg ttgtcaagggt 3180  
ggcaagggga atgccagtca gcaagcccag gatctttccg gaagtttatt tttattgtac 3240  
aagtgaacct gctttaaata tgtacagtca ttagctaagg gtattatcgt tagctgttat 3300  
tgaggtagaa aaatccctg gagtggttg aatttgtcca gaggttctgc cctaaaagggt 3360  
taatgagagc tctccagccc tgacagcagc tgacaggcat ctttgaaacc aactaggtga 3420  
ctgagctaata accctgcatg actttgaagc ctttaaaata tctgaaaagc aaatcacact 3480  
tcagtataca ctcaattaat ctctgtacta aagagaataa acatttataa acaattaggg 3540  
caggcccaaa aaatttaaga taagggtccac tgtatcccaa agtcatctga gcctcactaa 3600  
gaaatttctc aggaagccag gaacattttc tttaccctc tgtcagaggg cattggctct 3660  
ccgttctcct ctgaaggcct ccccaagcca tgagaaggca ggaagcacag cctctgaaaa 3720  
gcaagaacac aggagacctt ccttgcttta agactggcct ggtctttacc tgctcttggg 3780  
agtgaccatt cccctcttac cacctgtgaa ggagagaaaa tcgccccaat gctcaagggtg 3840  
gtgattcaga gcatggaagt ggaagggctt gggggccagt ggtgcataaa gggaatgggc 3900  
catcagcact gtcatactgt ttcagaatta aatatgcaga ccagaaggct ctatacacia 3960  
gagatggcca gctgctggtg ggagatcctg ttgcagacaa ctgctgtgca ggtgagcttc 4020  
tggggcctcc accccatgct ccatctgcc a taggcctcc cttctcttct tccctttcct 4080  
ccccagcaga gggtcagcag ctgccccag tgacagttag aagggccaga gagcagctgt 4140  
ggcctctcct agcgagggga catgactcct gcagaagtcc tggctcaccg tccagtctgc 4200  
atgcagggcc aggccagggtg tgcccagtgc cagttccttc ctgctgagc ctttacctgc 4260  
caagagcctg caacatgggg ttccttgtc cettgactct tctctctctt cctcctaga 4320  
gaagatctgc acacttcta acagaggctt ggaccgcacc aagggtccca ttttcttggg 4380  
gatccaggga gggagccgct gcctggcatg tgtggagaca gaagaggggc cttccctaca 4440  
gctggaggtg agaggcctct cccattcta ggggacactg cagacctggc ctgaccctg 4500  
ggatgctctg gcatctttgt gcctatctgt ggattcccag ccagggtccac atgtcctact 4560  
tctcaggtt tccaccatct cctctgcac ctagcaccaa gacccttgc ctctagaatc 4620  
tgcagaaggc agtcccttgg gtaaaaacca gccctgtcag gtcctttttt ggccaagccc 4680  
cagaggcctc cagggctaac acctccatca gcaactctcat tctgcagcca tccacctg 4740  
ccccacagga tgtgaacatt gaggaactgt acaaagggtg tgaagaggcc acacgcttca 4800  
ccttcttcca gagcagctca ggctccgct tccaggttga ggctgctgcc tggcctggct 4860  
ggttcctgtg tggcccgga gagccccag agccagtaca gtcaccaag gagagtgagc 4920

1000367.1.10201

cctcagcccg taccaagttt tactttgaac agagctggta gggagacagg aaactgcgtt 4980  
ttagccttgt gccccaaac caagctcatc ctgctcaggg tctatggtag gcagaataat 5040  
gtcccccgaa atatgtccac atcctaatacc caagatctgt gcatatgtta ccatacatgt 5100  
ccaaagaggt ttgcaaatag tgattatgtt aaggatcttg aaatgaggag acaatcctgg 5160  
gttatccttg tgggctcagt ttaatcacia gaaggaggca ggaagggaga gtcagagaga 5220  
gaatggaaga taccatgctt ctaattttga agatggagtg aggggccttg agccaacaaa 5280  
tgcaggtgtt tttagaaggt ggaaaagcca aggggaacga ttctcctcta gagtctccgg 5340  
aaggaacaca gctcttgaca catggatttc agctcagtga caccatttcc agacttctga 5400  
cctccacaac tataaaataa taaacttgtg ttattgtaaa cctct 5445

<210> 16

<211> 4388

<212> DNA

<213> Mouse

<400> 16

ccatatacctt atttcctgga ttatcatctc cctttcagcc gactggacat tgacagcatt 60  
tccaactttt caaccttgta aaaataacta attgaactat ttataacta agcatttggg 120  
caatcaatta cctctgcttg gaatgggggc aacaacacat gcaatcatgg gaaagccagg 180  
atgctgctgt ctgataccca gccctggcat tcgtgcagaa cctcactctc atctgtgcc 240  
tgatatacctt cactctcaag tcttttccca gtgactttta aaggcaacag aatcatatag 300  
ccaataatga aagctacttg gtctacagtt gtgtggcggt ttttatagat attttcatca 360  
tttacattta aaatgcatat cccaaaagtc cctataccc tccccaccc tgctcccta 420  
ccactgcac tccacttct tggccctggc ttccccctt actggggcat ataaagtgtg 480  
ctagaccaag gggcctctct tcccaatgat ggccaactag gccattttct gctacatatg 540  
cagctagaga caccagttct ggggttactg gttagtctat attgttgctt tacctatggg 600  
gttgagacc ccttcagctc ttgagtactt tctctagctc ctccattggg agccctgtgt 660  
tccatcctat agatgactgt gagcatcccc ttctgtattt gcaggcgtgg catatgaaat 720  
agtatctgca ttgtgtggct gattatggga tggacccccg ggtggggcag tctatggatg 780  
gtccatcctt tcatcttagc tccaaacttt gtctctgcaa cttcttccat ggatatttta 840  
gtccctaata tagggaggaa tgaagtatcc ccaagttgat cttccttctt gattttctta 900  
tgtttttagca gttggatgtt ggatattata ggtttctggg ctaatatcca cttatcagt 960

1000361.10001

agtacatatc aagtgaattc ttttgtgatt aggttacctc actcaagatg atattctcca 1020  
ctatgttcaa aacagcccta tttatagtag ccagaagact ggaaagaacc cagtcacctca 1080  
acagaggaat ggatacagaa aatgggcaca tttatgcaat ggagcccact cagatattaa 1140  
aaacaacgaa tttatgaaat tctegggcaa aacctatct aaagccagga ataaggaaaa 1200  
gatggactgc ctgcctgcag ctgggagagc tggggagacc tttgtggatt ctgtaatact 1260  
taggggtacg gaacagcttg tggtggata attctgagct ccagcatgtc tgcccccaa 1320  
aaaacattct gtttttctga aagccttttt cttctttgcc tcagtgaaga ccagacactc 1380  
ccaactgcag gaatgtgctc ctttcccatg gcaagatact acatgtaagt aatcttaacg 1440  
atcgctcaat caaggggcct ggagatcaca tgagaaggga aaaggctgag tcaaagggac 1500  
aaagctccct ctagccacag aaatctcaaa cactgaataa ttgatcttca tctttgtcaa 1560  
tcacaacagc cctctttcct ggtgacagaa tggacaact gtaagagtgg tattgcttag 1620  
tccattttac agaccggaa actcaacctc cagcagggtta tacaattttc ctcatgtcat 1680  
gcaattacc aaagcagag agtgggatcg gactctctgt tctctaaact gatgtagcta 1740  
gttcttagaa agctcaaaca atcttgagtc ccaaggacag cacctttatg gtcacctgga 1800  
ttgataccta tatcaaaaaa aaaaaaaggc ctcactagat agccctggct accctgaaac 1860  
tctcactgtg tacatttagg tgaccacgaa ctacacagaga tctgccttcc aagtgctggg 1920  
attaaagtat gtaccaccac acctgcatct ttgacaataa ctgagtggta tctaaattct 1980  
tccagtggct aaacagttaa gtcccagtc ccaagctctg acaaaaatgc caggtggctg 2040  
aaatctgtac agaccttctg tcttaatgta caagtgagcc tgctttaaaa acaatacgca 2100  
agctgttttt gctattgcta agtgttgagc agacagaaaa ggctcccaga agtggtaact 2160  
ttgggtccaga ggttctgttc tcaaatcat tgtgagctct gaaagcaact gatgggcagc 2220  
tctgaaatca gctgggcaat taggctaata acaggcataa ttttaatgtt tcacacgcat 2280  
gacagttcct cccagctgc cctagtagat acttaccctc ctaggcacgt cattagacct 2340  
ataggtataa ccagtgacta atcaggccct ggtctaattc taagttggcc tcctatataa 2400  
gtgccactca gagtgtacct catcatggct gtagtgggac cagagtctag ggacatagac 2460  
ttttctattg tccaatttct gatttgtgaa ttttctacaa aaagaatttt ttttaatttt 2520  
acaaatcaaa tcacagttac tacatcttca gttccttcat taattagtgt tactatttaa 2580  
aaaaataaaa taaatcaagc tcagaaacat catggatagg gttcattgta tctccagggt 2640  
acctgagctt caaagcaact cctcagacag ccatgaaaac atcctcaatt acctcatgag 2700  
aagacactat tgtcatttct ggagcctctg ataactctga gcctaggcag ctttgggatg 2760  
aaacaatttc tacccttatt ggaacagtgt cctctcctg tctggaaaca attcaccaaa 2820  
ggctccatgt ggtgtccag taaggtggta tggggacaga aatggacaat gatccctgag 2880

1000367.11001

ggcagtgatc cattaacctt gccctcctat ttcagaatca aggatgcaca tcaaaaggct 2940  
ttgtacacac ggaatggcca gctcctgctg ggagaccctg attcagacaa ttatagtcca 3000  
ggtgatcttc cgggtggtggg ggtggggggag tggagggggag ggtgtggggg gggctctctt 3060  
ccagaagttg cttagtgtcc atctgccaca aggccttgat tctttccttc aattgtgtct 3120  
ctagagacat gagaatattg tcacagtgat aaggagaaga ggtaggggca gtttcttcct 3180  
gtaaaaaatg aattccattt accctgcagt ctccatacag aaacaggcca gaggggggca 3240  
gaccagtaa cttctagctg agcctacct tgcctaaaac ctgccatctg tgggtcccctc 3300  
actgtctgaa ttgcattctg tcttacctcc cagagaaggt ctgtatcctt cctaaccgag 3360  
gcctagaccg ctccaaggtc cccatcttcc tggggatgca gggaggaagt tgctgcctgg 3420  
cgtgtgtaaa gacaagagag ggacctctcc tgcagctgga ggtgagacac ccctcctcat 3480  
tgcagtcagt actgccactg gaacatagtg acatctttga acccacatgt cccctctctt 3540  
gtttcccatc tatctctctt tgcctccagc tgagggactc tagcctttgg ggatgtacag 3600  
aaagaacatg gcttcggaaa actcttccct attgagtcct tctttggcca agcctctgag 3660  
gcactaaggg ctgacgtccc aaccaaacac tcatttcac tcacagctgt ctccctttcc 3720  
ccacaggatg tgaacatcga ggacctatac aaggggaggtg aacaaaccac ccgtttcacc 3780  
ttttccaga gaagcttggg atctgccttc aggettgagg ctgctgcctg ccctggctgg 3840  
tttctctgtg gccagctga gcccagcag ccagtgcagc tcaccaaaga gagtgaaccc 3900  
tccaccata ctgaattcta ctttgagatg agtcggtaaa gagacataag gctggggcct 3960  
cgtctagtgc cccagctctg agatcttctt gctcagcatc tctggaaagc agaataagga 4020  
agataccaaa gatgtttggg tcttaatccc cagaatctgt gaccgtgtta cattaaatgg 4080  
caaagggatt ttttttttcc ttcatggctc atttgggcc attggaatca tctgaggcct 4140  
catgaggaga aggaagaggt catgagggag actggcgcaa actttggtac taaaagtaac 4200  
aatggagaca gggaccataa gctgatgggt aacagtgggt tctagaaacc ggaaatgatg 4260  
agagctctcc tgacacaggt gtctggattt ttctggactg aagaatggcg aaataatata 4320  
gctccattat ttaagccac tgagtttgag atcattcaat gaagctgtca taataaaacc 4380  
tgtgcttc 4388

<210> 17

<211> 459

<212> DNA

<213> Mouse



<400> 17

atgtgctccc ttcccatggc aagatactac ataatcaagg atgcacatca aaaggctttg 60  
 tacacacgga atggccagct cctgctggga gaccctgatt cagacaatta tagtccagag 120  
 aaggtctgta tccttcctaa ccgaggccta gaccgctcca aggtcccat cttcctgggg 180  
 atgcagggag gaagttgctg cctggcgtgt gtaaagacaa gagagggacc tctcctgcag 240  
 ctggaggatg tgaacatcga ggacctatac aaggagggtg aacaaaccac ccgtttcacc 300  
 tttttccaga gaagcttggg atctgccttc aggttgagg ctgctgcctg ccctggctgg 360  
 tttctctgtg gccagctga gcccagcag ccagtgcagc tcaccaaaga gagtgaaccc 420  
 tccaccata ctgaattcta ctttgagatg agtcggtaa 459

<210> 18

<211> 152

<212> PRT

<213> Mouse

<400> 18

Met Cys Ser Leu Pro Met Ala Arg Tyr Tyr Ile Ile Lys Asp Ala His  
 1 5 10 15

Gln Lys Ala Leu Tyr Thr Arg Asn Gly Gln Leu Leu Leu Gly Asp Pro  
 20 25 30

Asp Ser Asp Asn Tyr Ser Pro Glu Lys Val Cys Ile Leu Pro Asn Arg  
 35 40 45

Gly Leu Asp Arg Ser Lys Val Pro Ile Phe Leu Gly Met Gln Gly Gly  
 50 55 60

Ser Cys Cys Leu Ala Cys Val Lys Thr Arg Glu Gly Pro Leu Leu Gln  
 65 70 75 80

Leu Glu Asp Val Asn Ile Glu Asp Leu Tyr Lys Gly Gly Glu Gln Thr  
 85 90 95

1000364 10201

Thr Arg Phe Thr Phe Phe Gln Arg Ser Leu Gly Ser Ala Phe Arg Leu

100

105

110

Glu Ala Ala Ala Cys Pro Gly Trp Phe Leu Cys Gly Pro Ala Glu Pro

115

120

125

Gln Gln Pro Val Gln Leu Thr Lys Glu Ser Glu Pro Ser Thr His Thr

130

135

140

Glu Phe Tyr Phe Glu Met Ser Arg

145

150

<210> 19

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer

<400> 19

gagccgccat gtgttcctc cccatggcaa g

31

<210> 20

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer

10006414001

gctaccagct ctggttcaaag taaaac

26

<211> 143

<212> PRT

<213> Homo sapiens

Met Gln Ala Phe Arg Ile Trp Asp Val Asn Gln Lys Thr Phe Tyr Leu

1                      5                      10                      15

Arg Asn Asn Gln Leu Val Ala Gly Tyr Leu Gln Gly Pro Asn Val Asn

20                      25                      30

Leu Glu Glu Lys Ile Asp Val Val Pro Ile Glu Pro His Ala Leu Phe

35                      40                      45

Leu Gly Ile His Gly Gly Lys Met Cys Leu Ser Cys Val Lys Ser Gly

50                      55                      60

Asp Glu Thr Arg Leu Gln Leu Glu Ala Val Asn Ile Thr Asp Leu Ser

65                      70                      75                      80

Glu Asn Arg Lys Gln Asp Lys Arg Phe Ala Phe Ile Arg Ser Asp Ser

85                      90                      95

Gly Pro Thr Thr Ser Phe Glu Ser Ala Ala Cys Pro Gly Trp Phe Leu

100                      105                      110

Cys Thr Ala Met Glu Ala Asp Gln Pro Val Ser Leu Thr Asn Met Pro

115                      120                      125

130

140

<211> 146

<213> Homo sapiens

Ala Arg Tyr Tyr Ile Ile Lys Tyr Ala Asp Gln Lys Ala Leu Tyr Thr

1

5

10

15

Arg Asp Gly Gln Leu Leu Val Gly Asp Pro Val Ala Asp Asn Cys Cys

20

25

30

Ala Glu Lys Ile Cys Ile Leu Pro Asn Arg Gly Leu Asp Arg Thr Lys

35

40

45

Val Pro Ile Phe Leu Gly Ile Gln Gly Gly Ser Arg Cys Leu Ala Cys

50

55

60

Val Glu Thr Glu Glu Gly Pro Ser Leu Gln Leu Glu Asp Val Asn Ile

65

70

75

80

Glu Glu Leu Tyr Lys Gly Gly Glu Glu Ala Thr Arg Phe Thr Phe Phe

85

90

95

Gln Ser Ser Ser Gly Ser Ala Phe Arg Leu Glu Ala Ala Ala Trp Pro

100

105

110

Gly Trp Phe Leu Cys Gly Pro Ala Glu Pro Gln Gln Pro Val Gln Leu

115

120

125

Ser Trp

<210> 23

<211> 151

<212> PRT

<213> Homo sapiens

<400> 23

Val Arg Ser Leu Asn Cys Thr Leu Arg Asp Ser Gln Gln Lys Ser Leu

1                      5                      10                      15

Val Met Ser Gly Pro Tyr Glu Leu Lys Ala Leu His Leu Gln Gly Gln

20                      25                      30

Asp Met Glu Gln Gln Val Val Phe Ser Met Ser Phe Val Gln Gly Glu

35                      40                      45

Glu Ser Asn Asp Lys Ile Pro Val Ala Leu Gly Leu Lys Glu Lys Asn

50                      55                      60

Leu Tyr Leu Ser Cys Val Leu Lys Asp Asp Lys Pro Thr Leu Gln Leu

65                      70                      75                      80

Glu Ser Val Asp Pro Lys Asn Tyr Pro Lys Lys Lys Met Glu Lys Arg

85                      90                      95

100                      105                      110

115                      120                      125

130                      135                      140

145 150

<211> 148

<213> Homo sapiens

Pro Met Ala Arg Tyr Tyr Ile Ile Lys Tyr Ala Asp Gln Lys Ala Leu

1                      5                      10                      15

20                      25                      30

35                      40                      45

50                      55                      60

Ala Cys Val Glu Thr Glu Glu Gly Pro Ser Leu Gln Leu Glu Asp Val

65 70 75 80

Asn Ile Glu Glu Leu Tyr Lys Gly Gly Glu Glu Ala Thr Arg Phe Thr

85 90 95

Phe Phe Gln Ser Ser Ser Gly Ser Ala Phe Arg Leu Glu Ala Ala Ala

100 105 110

Trp Pro Gly Trp Phe Leu Cys Gly Pro Ala Glu Pro Gln Gln Pro Val

115 120 125

Gln Leu Thr Lys Glu Ser Glu Pro Ser Ala Arg Thr Lys Phe Tyr Phe

130 135 140

Glu Gln Ser Trp

145

<210> 25

<211> 28

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 25

gtcatatgtg ttccctcccc atggcaag

28

<210> 2

<211> 26

<212> DNA

<213> Artificial Sequence

10003671.10000

<220>

<223> Description of Artificial Sequence: Primer

<400> 26

gttttacttt gaacagagct ggtagtgatc aagcttc

37

100064 110004  
TGGCTTGGCTT